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(54) Title: METHODS, APPARATUS AND COMPUTER PROGRAM PRODUCTS FOR DETERMINING A CORRECTED DISTANCE BETWEEN AN AIRCRAFT AND A SELECTED RUNWAY

(57) Abstract: Methods, and computer program products for determining a corrected distance between an aircraft and selected runway, such that the corrected distance may be used for ground proximity warning calculations. The present invention includes a processor that receives data related to the coordinates of the aircraft and a selected runway. Based on these coordinate values, the processor determines a coordinate distance between the aircraft and selected runway. The processor calculates a distance value that corresponds to the altitude of the aircraft above the runway along the predetermined glideslope. The processor compares the coordinate distance and the calculated distance values and selects either the coordinate distance or the calculated distance value as the corrected distance between the aircraft and the selected runway. The present invention also provides a processor for determining a look ahead distance value for ground proximity warning calculations.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/02574

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G08G5/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G08G G08B G01S G05D F41G G01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|---|
| X A | US 5 839 080 A (MULLER HANS R ET AL) 17 November 1998 (1998-11-17) figures 5-17 column 2, line 25-50 column 3, line 1-15,45-50 column 6, line 10-20,30-50 column 9, line 1-10,25-70 column 10, line 1-55 column 11, line 1-10,55-70 column 12, line 1-15,45-70 column 13, line 1-5,40-55 ----- | 1-4,6-9, 11-14, 16-20, 22-24 5,10,15, 21 |

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Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| US 5839080 A | 17-11-1998 | EP 0842396 A | 20-05-1998 |
| | | US 6088634 A | 11-07-2000 |
| | | WO 9705450 A | 13-02-1997 |
| | | US 6122570 A | 19-09-2000 |
